IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A conductive carbonaceous-fiber sheet which has a thickness of from 0.05 to 1 mm, a weight per a unit area of from 60 to 250 g/m^2, a bending resistance (L) as determined by the 45° Cantilever method of 6 cm or higher, and an in-plane volume resistivity of 0.2 Ω cm or lower.

wherein the sheet comprises a binder or a product of carbonization of the binder in an amount of from 10 to 40% by weight and comprises carbonaceous fibers bonded to one another with the binder or its carbonization product through point contact.

Claim 2 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which has an air permeability as determined in accordance with JIS L 1096, method A (frazil method) of from 50 to 150 $cm^3/cm^2 \cdot sec$, the air permeability being a measure of the gas-diffusing properties of the sheet.

Claim 3 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which has a thickness of from 0.1 to 0.5 mm.

Claim 4 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which has a weight per a unit area of from 80 to 200 g/m^2.

Claim 5 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which has a bending resistance (L) as determined by the 45° Cantilever method of 8 cm or higher.

Claim 6 (Previously Presented): The conductive carbonaceous-fiber sheet as claimed in claim 1, which comprises carbonaceous fiber monofilaments having a diameter of from 6 to 50 μm.

Claim 7 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which has an in-plane volume resistivity of 0.07 Ωcm or lower.

Claim 8 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which comprises carbonaceous fibers fused to one another.

Claim 9 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which comprises carbonaceous fibers bonded to one another with a binder or a product of carbonization of the binder.

Claim 10 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which contains a binder or a product of carbonization of the binder in an amount of from 0.01 to 25% by weight and comprises carbonaceous fibers bonded to one another by surface coating with the binder or its carbonization product.

Claim 11 (Previously Presented): The conductive carbonaceous-fiber sheet as claimed in claim 10, which contains the binder or a carbonization product thereof in an amount of from 0.01 to 7% by weight.

Claim 12 (Canceled).

Claim 13 (Currently Amended): The conductive carbonaceous-fiber sheet as claimed in claim ~~12~~ 1 , wherein the carbonaceous fibers are ones obtained by spraying or applying a dispersion of fine particles of a semicured thermosetting resin, optionally conducting drying, pressing or both drying and pressing, and then completely curing the resin.

Claim 14 (Currently Amended): The conductive carbonaceous-fiber sheet as claimed in ~~any one of claims 1 to 13~~ claim 1, which is a woven fabric.

Claim 15 (Original): The conductive carbonaceous-fiber sheet as claimed in claim 1, which has a degree of fluffing of from the second to the fifth grade in terms of the index as determined through a fluff grade test.

Claims 16-29 (Canceled).

Claim 30 (Currently Amended): A solid polymer electrolyte fuel cell which employs the conductive carbonaceous-fiber sheet as claimed in ~~any one of claims 1 to 13~~ claim 1 as a gas diffusion layer material.

Claim 31 (Canceled).

Claim 32 (Original): A motor vehicle having the solid polymer electrolyte fuel cell as claimed in claim 30 mounted therein.

Claim 33 (Canceled).

Claim 34 (Original): A cogeneration power system having the solid polymer electrolyte fuel cell as claimed in claim 30 installed therein.

Claim 35 (Canceled).

Claim 36 (Original): A solid polymer electrolyte fuel cell which employs the conductive carbonaceous-fiber sheet as claimed in claim 14 as a gas diffusion layer material.

Claim 37 (Previously Presented): A solid polymer electrolyte fuel cell which employs the conductive carbonaceous-fiber sheet as claimed in claim 15 as a gas diffusion layer material.

Claim 38 (Previously Presented): The conductive carbonaceous-fiber sheet as claimed in claim 1, wherein the carbonaceous fibers are oriented.

Claim 39 (Previously Presented): The conductive carbonaceous-fiber sheet as claimed in claim 1, wherein the carbonaceous fibers are axially oriented to one another.

Claim 40 (Previously Presented): The conductive carbonaceous-fiber sheet as claimed in claim 1, wherein the carbonaceous fibers are twisted yarns.

Claim 41 (New): The conductive carbonaceous-fiber sheet as claimed in claim 1, wherein the point contact is a particle of a thermosetting resin.

BASIS FOR THE AMENDMENT

Claims 1-11, 13-15, 30, 32, 34, and 36-41 are active in the present application. Claims 12, 16-29, 31, 33, and 35 have been canceled. Claim 41 is a new claim. Support for the new claim is found in the original claims and in the specification on page 25, lines 17-22 and the paragraphs bridging pages 27-28 and 29-30, respectively, and Example 9 on page 41.

REQUEST FOR RECONSIDERATION

Applicants thank Examiner Vo for the helpful and courteous discussion of June 1, 2004. During the discussion, the Examiner indicated that the subject matter of Claims 12 and 13 may be allowable over the prior art of record in the case.

Claim 1 has been amended to include the limitations of previous dependent Claim 12. Amended Claim 1 requires that the carbonaceous-fiber sheet contain fibers that are bonded to one another through point contact. Nowhere in the prior art of record is it disclosed that the prior art fibers are contacted with one another through point contact.

Figure 2 shows the formation of a point contact where a particle contacts at least two fibers and thereby makes a point contact between the two fibers. Importantly, in this aspect of the invention, the other surfaces of the fibers are not coated with a resin. In contrast, the coating processes disclosed in the prior art relied upon by the Examiner include dipping the prior art fibers in a solution of a resin. Applicants submit that those of ordinary skill in the art would readily recognize that such a process would inherently cover all surfaces of the fibers and would lead to continuous connections between fibers and not the point contacts of the present dependent claims. For example in Miwa it is disclosed that the prior art carbon fiber mat is impregnated with a resin (see line 10 of the Abstract; column 3, lines 42-43; column 7, lines 53-59; column 8, lines 39-47; column 12, lines 32-41). Koschany discloses impregnating the prior art woven mat with an electrically conductive material (column 2, lines 24-35). Koschany discloses contacting the prior art woven fabric with binders that include polymeric materials (column 3, lines 8-26). Koschany does not disclose contacting the woven mat with a partially cured resin in order to form point contacts.

Therefore, none of the prior art references relied upon by the Office disclose or suggest a conductive carbonaceous-fiber sheet or a conductive carbonaceous-fiber woven fabric that has fibers bonded to one another with a binder through point contact.

Dependent Claim 13 requires that the invention of Claim 1 is prepared by contacting a dispersion of fine particles of a semicured thermosetting resin with the fibers. For example, in Example 9 a woven fabric is exposed to an aqueous dispersion which contains particles having a size of from 10 to 20 μm of a semicured phenolic resin. The Office asserts that the materials of the prior art may have the same bending resistance and degree of fluffing of the carbonaceous fiber sheet of the present invention. Applicants traverse this assertion on the grounds that the Office has provided only conclusory statements that such properties are inherent in the prior art and has not otherwise provided any support for this assertion. The Office stated that since the materials have the same composition and properties such as thickness, basic weight and resistivity "it is not seen that the bending resistance and degree of fluffing would have been outside the claimed range." It appears that the Office is asserting that because some of the properties of the claimed invention may be similar to the properties of one or more of the prior art materials, that all of the properties of the claimed invention must be exhibited by the prior art. Applicants note that properties such as resistivity can be affected by the degree of fusing between fibers, thickness of fibers, degree of graphitization and other factors.

The Office also states that products of identical chemical composition cannot have mutually exclusive properties. This statement makes no sense. There are many chemical compositions that have the same chemical formula but have substantially different properties.

Applicants have demonstrated that not all carbonaceous fiber sheets or woven fabrics are able to meet the claim limitations. Applicants have provided Examples and Comparative Examples in the specification beginning on page 37. As is demonstrated in Table 1 on page 44 of the specification, the properties of such materials can vary depending on, for example, the method of preparing the sheet or fabric. In the Comparative Examples the presence of a phenolic resin is either omitted or is present in a different amount than in the claimed

invention. The resulting comparative fabrics or sheets may have volume resistivity or bonding resistance that is outside the claim limitations.

Applicants submit the presently claimed invention wherein the fibers are bonded to one another through point contact is patentable over the prior art of record and respectfully requests passage of all now-pending claims to Issue.

Respectfully submitted,

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